

ABSTRACT OF THE DISCLOSURE

The present invention discloses a method for manufacturing MTJ cell of MRAM. In accordance with the method, a portion of a free magnetic layer by a hard mask layer pattern is subjected to a halo ion implant process. The state of the portion of the free magnetic layer subjected to the halo ion implant process is converted into an amorphous state. The portion of the free magnetic layer is then oxidized to form an oxide film. A patterning of MTJ cell is performed to form a MTJ cell, wherein polymers are not generated since the oxide film is etched instead of the free magnetic layer.